

Claims:

1. A method for setting and retrieval of a well plug, where the well plug is first moved to the required position in the well bore, characterized in that the method comprises the following steps:

pushing a displacement means axially via a operating means, thereby pushing an anchoring device radially out from the well plug such that anchoring in the well bore wall is achieved;

locking the displacement means in a locked position by means of a locking device; and

pushing the operating means further axially, thereby pushing a link connection with a packer element radially out from the well plug such that the packer element forms a pressure tight seal against the well bore wall.

2. The method according to claim 1, further comprising the following steps:

pushing the operating means axially, such that the link connection with packer is pushed radially inwards, while the anchoring device still maintains anchoring of the well plug against the well bore wall; then

pushing the operating means further axially, such that the locking device is released and the anchoring device is pulled radially inwards; then

pulling the well plug out of the well bore.

3. The method according to claim 2, further comprising pushing the operating means axially, such that the anchoring device is pulled radially inward.

4. In a retrievable well plug device, comprising a through shaft with link connections and a packer element, where the link connection comprises a number of first and second links, pivotally connected to each other, where the first and second links in their respective ends are pivotally fastened to fastening devices, such that at setting of the well plug by pushing the link connections and the packer element towards each other, the link connections and the packer element expand radially, such that a mechanical barrier for the packer element is formed, the improvement comprising:

at least one of the links having a generally T-shaped cross sectional profile and comprising an arm with an end intended for fastening to the fastening devices and the other end of the arm comprises means for fastening to the second link of the link connection;

wherein at least one of the links further comprises at least one upper supporting surface generally transverse to the arm, such that the upper supporting surface forms an approximately tight mechanical barrier against the packer element in the expanded position.

5. The device according to claim 4, wherein the arm of the link is disposed generally under the upper supporting surface.

6. The device according to claim 5, wherein the link further comprises a first lower supporting surface generally under one of the upper supporting surfaces and a second lower supporting surface generally under another one of the supporting surfaces, such that at least parts of said one of the upper supporting surface are supported towards the lower supporting surface of the adjacent link in contracted and expanded position.

7. The device according to claim 4, wherein the arm of the link is disposed generally under the supporting surface, and the arm of the link is disposed generally under an intersecting line between the supporting surface and the supporting surface.
8. The device according to claim 7, wherein the link further comprises a lower supporting surface generally under the upper supporting surface and a lower supporting surface generally under the supporting surface on the opposite side of the arm, such that at least parts of the upper supporting surface of the link are supported against the lower supporting surface of the adjacent link and at least parts of the upper supporting surface of the link is supported against the lower supporting surface of the adjacent link in contracted and expanded position.
9. The device according to claim 4, wherein the upper supporting surfaces ends in a preferably curved end surface in the end opposite to the end.
10. The device according to claim 9, wherein the curved end surface has a radius of curvature approximately equal to the inner radius of the well bore.
11. The device according to claim 4, wherein the upper supporting surface has a radius of curvature approximately equal to the outer radius of the well plug.
12. The device according to claim 4, further comprising a flexible enclosure disposed radially on the outside of the links for the protection of the link connections against dirt etc.
13. The device according to claim 4, wherein both the links form the link connection.

14. The device according to claim 4, further comprising an operating means connected to the fastening device for causing the radial expansion and the radial contraction of the link connection.

15. The device according to claim 4, wherein the link is formed such that the width of the upper supporting surface increases as the distance from the end increases.

16. In a retrievable well plug device, having an anchoring device with a number of gripping devices, wherein the gripping devices upon setting of the well plug expand radially, thereby providing an anchoring of the well plug to the well bore wall, the improvement comprising:

a plurality of links which are pivotally secured to a securing device and in a second end pivotally secured to the gripping device by means of fastening means; and

wherein the securing device is pushed against the securing device to achieve the radial expansion of the anchoring device.

17. The device according to claim 16, wherein the securing device is axially resiliently arranged relative to the well plug by means of at least one spring device, thereby achieving a pretensioning of the anchoring device and/or the packer element with two mechanical barriers.

18. The device according to claim 16, wherein the gripping device in the contracted position is at an angle α between a length axis of the well plug and a line between a pivot axis of the fastening means and a pivot axis of the ball-shaped end.

19. The device according to claim 16, wherein the links preferably comprise a supporting surface for support against a supporting surface of the gripping device in a contracted position.

20. The device according to claim 16, wherein the links preferably comprise a supporting surface for support against a supporting surface of the gripping device in an expanded position.